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**ICETE 2014**

11<sup>th</sup> INTERNATIONAL JOINT CONFERENCE  
ON E-BUSINESS AND TELECOMMUNICATIONS



# SIGMAP 2014

11<sup>TH</sup> INTERNATIONAL CONFERENCE ON SIGNAL  
PROCESSING AND MULTIMEDIA APPLICATIONS

## PROCEEDINGS

Vienna, Austria

28 - 30 August, 2014

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# SIGMAP 2014

Proceedings of the  
11th International Conference on  
Signal Processing and Multimedia Applications

Vienna, Austria

28 - 30 August, 2014

Sponsored by  
**INSTICC – Institute for Systems and Technologies of Information, Control and Communication**

Co-organized by  
**OCG – Austrian Computer Society**  
**TU Wien – Vienna University of Technology**

In Cooperation with  
**ACM SIGDOC – ACM Special Interest Group on Design of Communication**  
**ACM SIGMM – ACM Special Interest Group on Multimedia**

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**Seymour Goodman**

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Atta Badii, University of Reading, U.K.

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## SELECTED PAPERS BOOK

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A number of selected papers presented at SIGMAP 2014 will be published by Springer-Verlag in a CCIS Series book. This selection will be done by the Conference Co-chairs and Program Chair, among the papers actually presented at the conference, based on a rigorous review by the ICETE 2014 Program Committee members.



# FOREWORD

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We warmly welcome you to SIGMAP 2014 - International Conference on Signal Processing and Multimedia Applications, which is held, this year in Vienna, Austria

The SIGMAP 2014, is integrated in the ICETE (International Conference on e-Business and Telecommunications) joint conference, which puts together six complementary conferences, namely DCNET, ICE-B, OPTICS, SECRIPT, SIGMAP and WINSYS, covering a broad range of related fields, including data communication networking, e-business, optical communication systems, security and cryptography, signal processing and multimedia applications, and wireless networks and information systems.

Sponsored by INSTICC (the Institute for Systems and Technologies of Information, Control and Communication) and co-organized by the Austrian Computer Society and the Vienna University of Technology, the SIGMAP is organized in cooperation with ACM SIGDOC (Special Interest Group on Design of Communication) and ACM SIGMM (Special Interest Group on Multimedia). Moreover, it has WfMC (Workflow Management Coalition), OMG (Object Management Group), and FIPA (The Foundation for Intelligent Physical Agents) as an Organizational Sponsor.

We would like to emphasize that ICETE 2014 includes five distinguished keynote lectures, delivered by experts in their fields, including (alphabetically): Ivona Brandic (Vienna UT, Austria), Matteo Golfarelli (University of Bologna, Italy), Seymour Goodman (Georgia Institute of Technology, United States), Dimitris Karagiannis (University of Vienna, Austria), and Edgar Weippl (Secure Business Austria - Vienna University of Technology, Austria).

With its six segments, we expect it to appeal to a global audience of the engineers, scientists, business practitioners and policy experts, interested in R&D on Telecommunication Systems and Services. All tracks focus on research related to real world applications and rely on contributions not only from academia, but also from industry, business and government, with different solutions for end-user applications and enabling technologies, in a diversity of communication environments. The accepted papers demonstrate a number of new and innovative solutions and the vitality of these research areas.

ICETE 2014 received 335 papers in total, with contributions from 56 different countries, in all continents, of which 11% were accepted and orally presented as full papers. To evaluate each submission, a double-blind paper evaluation method was used: each paper was blindly reviewed by at least two experts from the International Program Committee. In fact, most papers had 3 reviews or more. With this acceptance ratio, ICETE 2014 continues the tradition of previous conferences as a distinguished and high-quality conference. Extended versions of selected best papers of the conference will be invited to appear in a post-conference book that will be published by Springer.

A successful conference involves more than paper presentations alone. It is also a meeting

place, where ideas about new research projects and other ventures are discussed and debated. Therefore, a social event including a conference diner/banquet has been planned for evening of August 29th in order to promote this kind of social networking.

We would like to express our thanks to all colleagues involved in supporting this conference. First of all, we thank all authors including those whose papers were not included in the program. We also would like to thank all members of the International Program Committee and reviewers, who provided invaluable help with their expertise, dedication and time. We would also like to thank the panelists and invited speakers for their invaluable contribution, in sharing their vision, knowledge and research outcomes. Special thanks go to the leadership, faculty and staff of Vienna University of Technology for hosting the conference.

Finally, a word of appreciation for the hard work of the INSTICC team; organizing a conference of this level is a task that can only be achieved by the collaborative effort of a dedicated and highly capable team.

We hope that the papers accepted and included in the proceedings may be helpful references in future works for all those who need to address topics in signal processing and multimedia applications, as well as other ICETE knowledge areas.

Enjoy the program and your stay in Vienna.

**Mohammad S. Obaidat**

Monmouth University, U.S.A.

**Andreas Holzinger**

Medical University Graz, Austria

**Enrique Cabello**

Universidad Rey Juan Carlos, Spain

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